

REMARKS

Applicants have carefully reviewed the Office Action mailed June 7, 2005. By this Amendment, claims 1, 6, 13, 18-19, 21, 24, 26-28, 30, and 42 are amended, claims 14-17, 37, 41, and 43 are canceled, and new claims 47-66 are added. Fifty-nine (59) claims are pending in this application, of which four are in independent form (claims 1, 50, 55, and 62). For any fees that are deemed necessary following submittal of this Amendment, the undersigned hereby authorizes such fees to be charged to our deposit account, Deposit Account No. 061910.

It is noted that Applicants have made the above-identified modifications to the claims solely to advance prosecution of the instant application and to obtain allowance on allowable claims at the earliest possible date. Accordingly, no admission may be inferred from the amendments of claims herein. Applicants expressly reserve the right to pursue the originally filed claims in the future. Additionally, Applicants submit that the Amendments made herein introduce no new matter.

The following sections address both the formal and substantive issues raised by Examiner in the June 7, 2005 Office Action. On the formal side, Applicants address Examiner's rejections of claims 31 and 32 for lack of enablement and of claims 20-32 as being indefinite. On the substantive side, Applicants explain why they believe the claims of the present application are patentable over Schubert.

A. Formal Rejections: Claims 31-32 for Lack of Enablement and Claims 20-32 for Indefiniteness

Applicants respectfully traverse Examiner's rejection of claims 31 and 32 for lack of enablement. Examiner is correct that the first strut is able to rotate about the distal joint. But Examiner's characterization of the first distal joint as "fixed" appears to evidence a

misunderstanding of the inventions of claims 31 and 32. According to claim 1, the first strut is coupled at its proximal portion to the proximal link and at its distal portion to the distal link. Moreover, the first strut is rotatable relative to the proximal link. Thus, as the first strut rotates relative to the proximal link, the distal link follows. And as the first strut rotates in a downward direction relative to the proximal link, the distal link also moves in a downward direction. It follows that the first distal joint moves in a downward direction as the distal link moves in a downward direction. Applicants respectfully submit that the present application does adequately teach the first distal joint moving in a downward direction. Accordingly, Applicants respectfully request that Examiner withdraw the rejection of claims 31 and 32 based on a lack of enablement.

Moreover, Applicants respectfully submit that the amendments to claim 1, from which claims 20-30 depend, suffice to overcome any indefiniteness issues that may exist. Examiner asserts that the first strut rotating relative to the cam, a feature recited in each of claims 20-30, lacks antecedent basis. Both “the first strut” and “the cam” find adequate antecedent basis in claim 1. Applicants do not concede that providing antecedent basis for a *relationship* between two components, on top of doing so for the components themselves, is required. But, in the interest of expedient allowance of these claims, Applicants have amended claim 1 to explicitly recite that “the first strut is rotatable about the cam.” Now, the relationship between the first strut and the cam recited in claims 20-30 finds antecedent basis in claim 1. Accordingly, Applicants respectfully request that Examiner withdraw the rejection of claims 20-30 based on indefiniteness.

As for the rejection of claims 31 and 32 based on indefiniteness, Applicants respectfully direct Examiner’s attention to the discussion of these claims above. Based on the subject matter set forth in that discussion, Applicants respectfully submit that the movement of the first distal

joint is sufficiently clear. Accordingly, Applicants respectfully request that Examiner withdraw the rejection of claims 31 and 32 based on indefiniteness.

B. Applicants' Explanation of Patentability

i. Amended Independent Claim 1

Applicants respectfully submit that none of the claims presented in this application are either anticipated or rendered obvious by Schubert. As amended, this application presents four independent claims. The June 7, 2005 Office Action rejects an earlier version of independent claim 1, and this Amendment adds new independent claims 50, 55, and 62. The remaining claims depend from these three. The following paragraphs explain why Applicants believe that Schubert does not anticipate or render obvious any of the claims presented in this Application.

Applicants respectfully submit that amended independent claim 1, and the claims that depend therefrom (2-13, 18-33, 38-40, 42, 44, and 46-49), are patentable over Schubert. Claim 1, as amended, recites a “proximal link comprising a cam” and “a cam follower coupled to the first strut.” In contrast, Schubert does not teach or suggest a proximal link comprising a cam. Furthermore, if Schubert’s component 12 is a cam follower and component 4 is a first strut, as Examiner contends, component 12 is not coupled to component 4. Thus, Schubert teaches neither a “proximal link comprising a cam” nor “a cam follower coupled to the first strut.” Accordingly, because Schubert does not teach such elements, Applicants respectfully submit that Schubert cannot anticipate amended independent claim 1 or any of its dependent claims.

Additionally, Applicants respectfully submit that the distinction discussed in the preceding paragraph is a nonobvious one. In claim 1, the support arm includes a cam that is a part of a link and a cam follower that is coupled to a strut. Assuming, arguendo, that Examiner’s

characterizations are accurate, Schubert teaches the opposite—a support arm that includes a cam that is part of the strut and a cam follower that is coupled to the link.

And a support arm according to claim 1 provides several advantages over the support arm of Schubert. For example, locating the cam surface on the proximal link, rather than on the strut, allows for the greatest range of motion and the finest adjustment in the smallest amount of space. Furthermore, a larger cam surface may be desirable for providing a greater range of motion and for allowing more precise control of the support arm's position. Locating the cam surface on the strut results in the cam surface itself rotating as the strut rotates. And as the cam surface increases in size and the support arm's range of motion increases, the rotating cam surface takes up more space—space that some applications simply cannot afford to provide. Locating the cam surface on the link, on the other hand, means that the cam surface does not rotate with the strut, thereby saving valuable workspace. Thus, making the cam apart of the link allows for greater range of motion, while maintaining precise control, in applications for which space is a premium. Also, because the support arm of claim 1 has fewer moving parts than Schubert's support arm, the support arm of claim 1 is more reliable and adapted to be frequently adjusted over long periods of time without failing. Accordingly, Applicants respectfully submit that claim 1, and all its dependent claims (2-13, 18-33, 38-40, 42, 44, and 46-49) are nonobvious over Schubert.

ii. New Independent Claim 50

Applicants respectfully submit that new independent claim 50 patentably distinguishes over Schubert. Claim 50 recites a first strut “defining a lumen” and a cam follower “housed substantially within the lumen.” In Schubert, component 4, which Examiner asserts is a first strut, does not define a lumen. Moreover, component 12, which Examiner asserts is a cam

follower, is not housed within the cited first strut. Accordingly, Applicants respectfully submit that Schubert does not anticipate new claim 50 or its dependent claims (51-54) because Schubert does not disclose all the elements of new independent claim 50.

Furthermore, Applicants respectfully submit that Schubert cannot render new independent claim 50 obvious because of the numerous advantages that stem from housing the cam follower substantially within a lumen defined by the first strut. First of all, claim 50's support arm has all the advantages of claim 1's support arm because the cam is part of the link and the cam follower is coupled to the first strut. Additionally, housing the cam follower within a lumen defined by the first strut further saves space and reduces the likelihood of foreign objects becoming entangled, or interfering, with the cam follower. Accordingly, Applicants respectfully submit that the support arm of new independent claim 50 and its dependent claims (51-54) are nonobvious over Schubert.

iii. New Independent Claim 59

Applicants also respectfully submit that new independent claim 55, and the claims that depend therefrom (56-61), are patentable over Schubert. Claim 55 recites a first strut that is "operable to rotate [to] a first position in which the distal portion of the first strut is below a horizontal plane extending through the first proximal joint." Examiner contends that Schubert's component 4 is a first strut and component 14 is a first proximal joint. But Schubert's component 4 is clearly incapable of rotating to a position in which its distal portion is below a horizontal plane extending through component 14. Thus, Schubert fails to disclose an element of claim 55. Accordingly, Applicants respectfully submit that Schubert cannot anticipate new independent claim 55.

Applicants further respectfully submit that a support arm with the range of motion discussed in the previous paragraph is a nonobvious advance over Schubert. Indeed, Schubert teaches reducing the torque that balances the load torque “sharply as desired just before the end position is reached (compare FIG. 2).” (Schubert col. 3, ll. 19-20). Thus, rather than maintaining the balancing torque as component 4 approaches the horizontal, Schubert teaches reducing such torque sharply. This is likely because, in Schubert, the load is supported from underneath in the end position. Applicants respectfully submit that many applications would benefit from the increased range of motion provided by the support arm invention of claim 55, such as, for example, mounting a flat panel display. Accordingly, Applicants respectfully submit that new independent claim 55, and the claims that depend therefrom (56-61) are nonobvious over Schubert.

iv. New Independent Claim 70

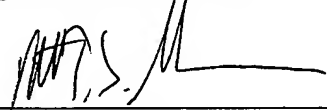
Applicants respectfully submit that new independent claim 62 is patentable over Schubert. Claim 62 recites a “a mounting assembly that includes (a) a first structural member pivotally coupled to the distal link, (b) a second structural member pivotally coupled to the first structural member, and (c) a mounting bracket pivotally coupled to the second structural member, the mounting bracket being configured to rotate relative to the distal link about at least three different axes.” Schubert nowhere teaches such a mounting assembly. Moreover, Applicants respectfully submit that the claimed mounting assembly provides numerous advantages that make the support arm of claim 62 nonobvious over Schubert. Being able to mount a load to the support arm and to rotate that load relative to the distal link about at least three different axes clearly would benefit countless applications, such as, for example, mounting

a flat panel display. Accordingly, Applicants respectfully submit that new independent claim 62, and the claims that depend therefrom, are neither anticipated by, nor rendered obvious by, Schubert and should be allowed.

In light of the foregoing, Applicants submit that the present rejections should be withdrawn, and prompt allowance of this application is respectfully requested. If Examiner believes that prosecution of the present application can be materially advanced by a telephonic interview, the undersigned would welcome a call at the number listed below.

Dated: Sept. 7, 2005

Respectfully submitted,

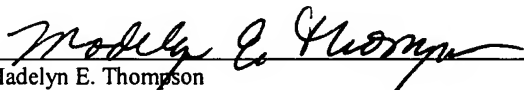

Matthew J.S. Graham
Registration No. 54,647
FREDRIKSON & BYRON, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402-1425
Telephone: (612) 492-7000
Facsimile: (612) 492-7077
Customer No. 022859

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 06-1910.

CERTIFICATE OF MAILING

I hereby certify that this document is being deposited with the United States Postal Service as First Class Mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

September 7, 2005
Date of Deposit


Madelyn E. Thompson

#3162824\2